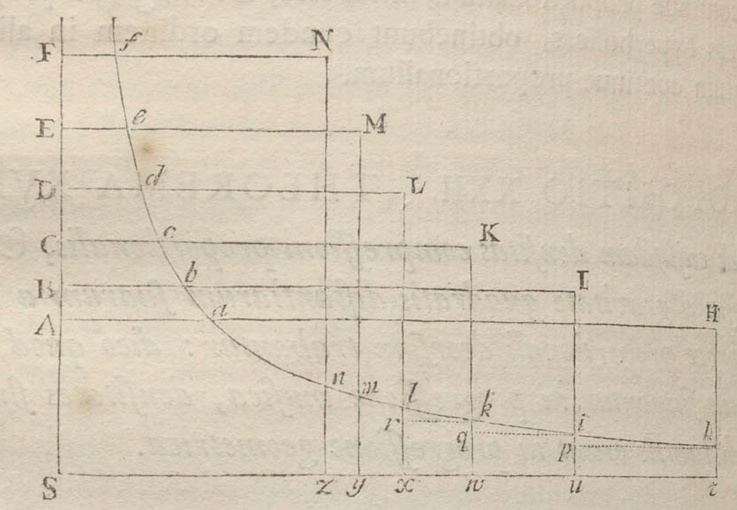
num $\frac{AH}{SA}$, $\frac{BI}{SB}$, $\frac{CK}{SC}$, &c. Quare cum denſitates ſint ut harum preſſionum ſummæ, differentiæ denſitatum $AH-BI$, $BI-CK$, &c. erunt ut ſummarum differentiæ $\frac{AH}{SA}$, $\frac{BI}{SB}$, $\frac{CK}{SC}$, &c. Centro S, aſymptotis SA, Sx deſcribatur hyperbola quævis, quæ ſecet perpendicula AH, BI, CK, &c. in a, b, c, &c. ut & perpendicula ad aſymptoton Sx demiſſa Ht, Iu, Kw in h, i, k; & denſitatum differentiæ tu, uw, &c. erunt ut $\frac{AH}{SA}$, $\frac{BI}{SB}$, &c. Et rectangula $tu \times th$, $uw \times ui$, &c. ſeu tp, uq, &c. ut $\frac{AH \times th}{SA}$, $\frac{BI \times ui}{SB}$, &c. id eſt, ut Aa, Bb, &c. Eſt enim, ex natura hyperbolæ, SA ad AH vel St, ut th ad Aa, ideoque $\frac{AH \times th}{SA}$ æquale Aa. Et ſimili argumento eſt $\frac{BI \times ui}{SB}$



æquale Bb, &c. Sunt autem Aa, Bb, Cc, &c. continue proportionales, & propterea differentiis ſuis $Aa-Bb$, $Bb-Cc$, &c. proportionales; ideoque differentiis hiſce proportionalia ſunt rectangula tp, uq, &c. ut & ſummis differentiarum $Aa-Cc$ vel $Aa-Dd$ ſummæ rectangulorum $tp+uq$ vel $tp+uq+wr$. Sunto ejuſmodi termini quam plurimi, & ſumma omnium differentiarum, puta $Aa-Ff$, erit ſummæ omnium rectangulorum, puta $zthn$, proportionalis. Augeatur numerus terminorum & minuantur diſtantiæ punctorum A, B, C, &c.

&c. in infinitum, & rectangula illa evadent æqualia areæ hyperbolicæ $zthn$, ideoque huic areæ proportionalis eſt differentia $Aa-Ff$. Sumantur jam diſtantiæ quælibet, puta SA, SD, SF progreſſione muſica, & differentiæ $Aa-Dd$, $Dd-Ff$ erunt æquales; & propterea differentiis hiſce proportionales areæ $thlx$, $xlnz$ æquales erunt inter ſe, & denſitates St, Sx, Sz, id eſt, AH, DL, FN, continue proportionales. *Q. E. D.*

Corol. Hinc ſi dentur fluidi denſitates duæ quævis, puta AH & BI, dabitur area $thiu$, harum differentiæ tu reſpondens; & inde invenietur denſitas FN in altitudine quacunque SF, ſumendo aream $thnz$ ad aream illam datam $thiu$ ut eſt differentia $Aa-Ff$ ad differentiam $Aa-Bb$.

Scholium.

Simili argumentatione probari poteſt, quod ſi gravitas particularum fluidi diminuatur in triplicata ratione diſtantiarum a centro, & quadratorum diſtantiarum SA, SB, SC, &c. reciproca (nempe $\frac{SA\,cub.}{SAq}$, $\frac{SA\,cub.}{SBq}$, $\frac{SA\,cub.}{SCq}$) ſumantur in progreſſione arithmetica; denſitates AH, BI, CK, &c. erunt in progreſſione geometrica. Et ſi gravitas diminuatur in quadruplicata ratione diſtantiarum, & cuborum diſtantiarum reciproca (puta $\frac{SAqq}{SA\,cub.}$, $\frac{SAqq}{SB\,cub.}$, $\frac{SAqq}{SC\,cub.}$, &c.) ſumantur in progreſſione arithmetica; denſitates AH, BI, CK, &c. erunt in progreſſione geometrica. Et ſic in infinitum. Rurſus ſi gravitas particularum fluidi in omnibus diſtantiis eadem ſit, & diſtantiæ ſint in progreſſione arithmetica, denſitates erunt in progreſſione geometrica, uti Vir Cl. *Edmundus Halleius* invenit. Si gravitas ſit ut diſtantia, & quadrata diſtantiarum ſint in progreſſione arithmetica, denſitates erunt in progreſſione geometrica. Et ſic in infinitum. Hæc ita ſe habent ubi fluidi compreſſione condenſati denſitas eſt ut vis compreſſionis, vel, quod perinde eſt, ſpatium a fluido occupatum reciproce ut hæc vis. Fingi poſſunt aliæ condenſationis leges, ut quod cubus vis comprimentis ſit ut quadrato-quadratum denſitatis, ſeu triplicata ratio vis eadem cum quadruplicata ratione denſitatis. Quo in caſu, ſi gravitas eſt reciproce ut quadratum diſtantiæ a centro, denſitas erit reciproce ut cubus diſtantiæ. Fingatur